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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,064

12/03/2004

Luc Moens

2004-1911A

8726

513 7590 01/27/2009

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WASHINGTON, DC 20006-1021

EXAMINER

TOSCANO, ALICIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

01/27/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,064	<b>Applicant(s)</b> MOENS ET AL.	
	<b>Examiner</b> Alicia M. Toscano	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-21 and 23-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-21, 23-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Response to Declaration and Arguments**

1. All arguments are drawn to proposed unexpected results in the declaration for the combination of polyester, glycidyl containing copolymer and curing agent. The declaration is not completely persuasive since the amount of curing agent in Ex B and Ex E is not disclosed. Applicant is advised that the amount of curing agent should be kept constant between the comparative examples in order for the Examiner to properly ascertain whether the results are unexpected. Without knowledge of such the data is not persuasive and the rejections stand as previously set forth.
2. In the event the curing agent had been kept constant in the experiments the Examiner puts forth the following: There is enough evidence to show unexpected flexibility due to the curing agent, however the claims are not commensurate in scope with the supposed unexpected results. Analysis of the declaration and the Examples of the specification show unexpected results for the XL552 and TGIC curing agents, but only for a range of 2.2-7.2. Further, there is no showing of the claimed mixture of diglycidyl terephthalate and triglycidyl trimellitate and the Examiner requires evidence that said mixture results in the unexpected properties. Regarding the carboxyl polyester, Applicant's experiments are convincing only for the ranges shown, i.e., 50-78 parts. Regarding the glycidyl, Applicant has shown MW to be critical but has only shown a Mn of 15000, which is not sufficient for the entire range claimed, also, the experiments are convincing only for the ranges of 18-43%.

As such Applicant is advised that if the curing agent is kept constant and unexpected results are deemed proper the above ranges would put the claims in condition for allowance. Alternatively Applicant can submit further data exemplifying the unexpectedness for the full ranges currently claim (i.e. by exemplifying the endpoints of the ranges).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 13-21, 23, 26-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moens (US 5397641) in view of Kaplan (US 587192) and Barkac (US 6191225) and in further view of Hoebeke (US 5525370) or Knoops (WO 02055620).

Elements of this rejection are as set forth in the action dated 5/15/08, reiterated below in its entirety. New Claims 27 is met as previously set forth. Since Moens does not require a semi-crystalline polyester new claim 29 is deemed met. Regarding the new curing agent requirements of claim 13, said requirements had been addressed in Moens, Kaplan, Barkac and Kaplan, and it is now incorporated to this rejection below. Regarding the new Mn range of claim 13, this has previously been rejected in view of Hoebeke or Knoops, and these rejections are now incorporated into this rejection.

Moens discloses thermosetting powder compositions. Thermosetting powder compositions containing a carboxyl group containing polyester and glycidyl group containing acrylic copolymers. The glycidyl copolymer is used in an amount from 90-10 wt% and the carboxyl polyester is used in an amount ranging from 60-80 wt% as further required by the Claims.

Moens discloses the carboxyl group polyester to comprise 75 mol% terephthalic acid, 10 mol% 1,3-cyclohexanedicarboxylic acid and 14 mol% of at least one other polycarboxylic acid. (Column 2 Lines 66-Column 3 Line 2). The other polycarboxylic acid may be isophthalic acid (Column 4 Line 54). The diol may be neopentyl glycol (Column 5 Line 6). Said composition meets the requirements of the carboxyl polyester of Claims 13, 14, 15, 16 and 17. The molecular weight of the polyester is from 1500 to 12000 (Column 6 Lines 29-30), the acid number is 30-150 mg of KOH and the ICI viscosity is from 0.1-15 Pa.s. As the composition requirements and three of the four properties of Claim 18 are met, Examiner finds the Tg range of Claim 18 to be inherent, thus meeting all the limitations of Claim 18. The molecular weight, as discussed, meets the limitations of Claim 19.

Moens discloses the glycidyl group containing acrylic polymer to be obtained from 45-75 wt% glycidyl methacrylate and the like (Column 6 Lines 35-38) and at least 5 to 55 wt% one other methacrylic monomer, such as acrylic acid (Column 6 Line 55). The molar percentages are not disclosed, however it is the Examiners position that since this weight range meets the limitations of Claim 13 it inherently encompasses the molar range disclosed in Claim 20.

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The Tg of the glycidyl acrylic polymer is 50-130C and the number average molecular weight is from about 2000 to about 8000 (Column 7 Lines 13-33). The ICI viscosity is not disclosed, however as the composition, molecular weight and Tg requirements have been met, it is the Examiners position that the ICI viscosity is inherent in Moens, thus meeting the limitations set forth in Claim 21.

Fillers are disclosed to include ultraviolet absorbing compounds, flow control agents, degassing agents and pigments (Column 8 Lines 19-48), as required by Claim 26.

Moens does not disclose if the carboxyl functional polyester is amorphous, crystalline or semicrystalline, as further required by Claim 1.

Barkac discloses thermosetting powder compositions comprising a carboxyl functional polyester (abstract). The carboxyl functional polyester may be crystalline or amorphous (Column 19 Lines 11-12). Barkac thusly teaches said polyesters to be functional equivalents.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moens the use of an amorphous carboxyl functional polyesters, as taught by Barkac, since it is recognized in the art as a functional equivalent to crystalline carboxyl functional polyesters.

Kaplan discloses thermosetting powder compositions comprising an amorphous or semicrystalline carboxy functional polyester (abstract). Kaplan thusly teaches said polyesters to be functional equivalents.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moens the use of an amorphous polyester, as taught by Kaplan, as it is recognized in the art as being a functional equivalent to a semicrystalline carboxyl functional polyester.

Moens discloses thermosetting powder coatings having a high gloss value and exemplifies the gloss in the Examples to be values greater than 80. There is no disclosure of Moens as to what range "high" encompasses and as such it is unclear to the Examiner why, when the compositional elements are met, there is a discrepancy in the gloss values between Moens and Applicant. It seems that the "high" range would encompass the 10-70 gloss range of Applicant's claims since the composition elements are met. Further, the wt%, monomer mole% and MW requirements of the claims and said combination have been met so the gloss is deemed inherent.

Additionally or Alternatively, Moens, Kaplan and Barkac include elements as set forth above. Hoebeke discloses processes for preparing powdered thermosetting compositions with matte finish. Said compositions comprise a carboxyl functional polyester (similar in monomer components, acid functionality and MW to both Moens and Applicant's claims) and a glycidyl containing acrylic copolymer (similar in monomer components, functionality and MW to both Moens and Applicant's claims). Hoebeke discloses that matte finishes can be formed by controlling various aspects of the carboxyl functional polymer and glycidyl functional acrylic copolymer.

See Column 4 lines 26-31, by controlling the branching and the acid number of the carboxyl polyester one can have a gloss or matte finish, likewise see Column 5 lines 54-Column 6 line 8, by controlling the Mn and the monomer makeup of the glycidyl functional acrylic copolymer one can also control the resulting powder coating finish. Hoebeke discloses that said makeup is critical for matte finish and in order to produce a matte finish over a gloss finish one must have a preponderant amount of methyl methacrylate, and less than 30 wt% glycidyl acrylate or methacrylate. The monomeric makeup has thusly been shown to be a result effective variable wherein certain ranges of said monomers will result in matte over gloss finishes. Example 15 of Moens discloses an example of the monomeric makeup the glycidyl functional acrylic copolymer used to form the glossy product of the Examples. Said Example is in accordance with said teachings of Hoebeke since the monomeric makeup is outside the ranges taught by Hoebeke and results in a glossy finish.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use in Moens the monomeric makeup of the glycidyl functional acrylic copolymer, as taught by Hoebeke, in order to form a matte finish.

Moens discloses typical thermosetting powder compositions in Column 1, lines 34-43. Thermosetting powder compositions containing a carboxyl group containing polyester and glycidyl group containing acrylic copolymers or beta-hydroxyalkylamides have good weatherability (Column 1 Line 6-Column 2 Line 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a combination of the acrylic copolymer and the beta-hydroxylalkylamide, both taught by the reference to be used as curing agents for the same composition, in the polyester composition of Moen, in order to obtain a powder coating composition having good weatherability properties. See *In re Kirkhoven* 205 USPQ 1069 (CCPA 1980).

Moens, Kaplan and Barkac include elements of the invention as discussed above. Moens and Kaplan do not explicitly disclose the use of a Mn of 10000 or greater for the glycidyl acrylate polymer.

Hoebeke discloses powder coating compositions comprising a polyester and a glycidyl acrylate binder (abstract). The Mn of the glycidyl acrylate binder is disclosed to be between 4000-10000 (abstract). This inclusion of the a glycidyl acrylate polymer within this Mn range is disclosed to be essential in order to create a coating with good appearance, adhesion and weathering resistance (Column 5 Lines 52-54).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moens, Kaplan and Barkac, the use of a Mn from 4000-10000, as taught by Hoebeke, in order to create a coating with superior appearance, adhesion and weathering.

Moens, Kaplan '192 and Barkac include elements of the invention as discussed above. Moens, Kaplan '192 and Barkac do not include the use of a Mn of greater than 10000 for the glycidyl acrylate polymer.

Knoops discloses powdered thermosetting compositions comprising a polyester and a glycidyl acrylate polymer (abstract). Said glycidyl acrylate polymer has a Mn ranging from 10000 to 25000 (pg 9 Line 14). Examples 29 and 30 disclose compositions with a glycidyl acrylate polymer Mn of 15000 and 9300 respectively. The low Mn glycidyl acrylate polymer results in a high gloss finish, whereas the high Mn glycidyl acrylate polymer results in a matte finish (pg 21 Lines 29-30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moens and Kaplan, the use of a Mn of 10000-25000, as taught by Knoops, in order to create a powder coating with a matte finish.

4. Claims 24, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moens (US 5397641), Hoebeke (US 5525370), Kaplan (US 587192) and Barkac (US 6191225 in further view of Kaplan (US 6313234).

Elements of this rejection are as set forth in the action dated 5/15/08, reiterated below in its entirety. New claim 28 is met by Kaplan, since Kaplan discloses the same curing agent as Applicant (XL552).

Moens, Kaplan '192 and Barkac include elements as set forth above. Moens, Kaplan '192 and Barkac do not disclose a specific beta-hydroxyalkylamine or the amount useful for the composition. Kaplan '234 discloses heat settable coating systems. Said systems comprise a carboxyl functional polyester and a curing agent of a beta-hydroxyalkylamide and/or a polyfunctional epoxy compound (abstract). Said curing agents both react with the carboxyl functionality on the polyester to cure the composition. Kaplan '234 thusly teaches the functional equivalents of said compounds.

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Said beta-hydroxyalkylamide may be bis[N,N'-di(beta-hydroxyethyl)]adipamide (Column 2 Line 63). The beta-hydroxyalkylamide is used in an amount from 3.5-5 wt% of the composition (Table 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moens, Kaplan '192 and Barkac the use of bis[N,N'-di(beta-hydroxyethyl)]adipamide, as taught by Kaplan '234, since it is recognized in the art as a functional equivalent to the epoxy functional polymers used to cure carboxyl polyesters.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moens, the use of 3.5-5 wt% beta-hydroxyalkylamine, as taught by Kaplan, in order to obtain a cured coating with superior hardness. Thus all the requirements of Claims 24 and 25 are met.

5. Rejection over Claim 22 under 35 U.S.C. 103(a) as being unpatentable over Moens, Hoebeke (US 5525370), Kaplan '192 and Barkac in further view of Hoebeke is overcome since the claim has been cancelled.

6. Rejection over Claim 22 under 35 U.S.C. 103(a) as being unpatentable over Moens, Hoebeke, Kaplan '192 and Barkac in further view of Knoops (WO 02055620) is overcome since the claim has been cancelled.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Toscano whose telephone number is (571)272-2451. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Sellers/  
Primary Examiner  
Division 1796

AMT